What is claimed is:

1. A method for determining the value of employee stock options, comprising:

providing a computing module;

inputting into said computer module one or more initial parameters comprising a maturity date, a volatility factor, a dividend yield, an initial stock price, a strike price, a risk-free price, a vesting period, a departure rate, and a blackout date;

outputting from said computing module one or more of an employee optimal exercise strategy, a probability of departure, a probability of forfeiture, an ESO value, and one or more calibration metrics including an expected option life, a ratio of a stock price to strike price, an expired worthless probability, and a future stock price.

2. A method of claim 1 further comprising:

computing an employee exercise boundary from said one or more initial parameters;

computing said employee optimal exercise strategy by comparing said future stock price with said employee exercise boundary;

computing an unforced exercised probability from said employee optimal exercise strategy;

computing said probability of forfeiture and a probability of forced exercise from said probability of departure, said vesting period, said strike price and said future stock price at a date of departure;

computing an ESO value from said probability of forfeiture, said probability of forced exercise and said unforced exercised probability.

3. A method of claim 2 further comprising:

calibrating said one or more initial parameters using a risk aversion factor, an employee wealth parameter and said departure rate.

4. An apparatus for determining the value of employee stock options comprising:

a processor configured to:

generate a computing module;

receive as input to said computing module, one or more initial parameters comprising a maturity date, a volatility factor, a dividend yield, an initial stock price, a strike price, a risk-free price, a vesting period, a departure rate, and a blackout date;

generate as output from said computing module, one or more of an employee optimal exercise strategy, a probability of departure, a probability of forfeiture, an ESO value, and one or more calibration metrics including an expected option life, a ratio of a stock price to strike price, an expired worthless probability, and a future stock price.

5. An apparatus of claim 4 wherein said processor is further configured to:

compute an employee exercise boundary from said one or more initial parameters;

compute said employee optimal exercise strategy by comparing said future stock price with said employee exercise boundary;

compute an unforced exercised probability from said employee optimal exercise strategy;

compute said probability of forfeiture and a probability of forced exercise from said probability of departure, said vesting period, said strike price and said future stock price at a date of departure;

compute an ESO value from said probability of forfeiture, said probability of forced exercise and said unforced exercised probability.

6. An apparatus of claim 2 wherein said processor is further configured to: calibrate said one or more initial parameters using a risk aversion factor, an employee wealth parameter and said departure rate.

7. A method according to claim 1 wherein said computing module determines the following set of values:

a. $u = \dfrac{\gamma + \sqrt{\gamma^2 - 4a^2}}{2a}$

b. $q = \dfrac{a-d}{u-d}$

c. $V(N,j,k) = U(W_{Nj})$

d. $V(n,j,k) = \begin{cases} V_e,\ k=0, Bdi(n)=0, V_e > V_c \\ V_e,\ k=1, Bdi(n)=0, MX>0 \\ V_c,\ k=0, Bdi(n)=1 \\ V_c,\ k=0, Bdi(n)=0, V_e \le V_c \\ V_f,\ k=1, Bdi(n)=1 \\ V_f,\ k=1, Bdi(n)=0, MX \le 0 \end{cases}$

e. $eev(n,j,k) = \begin{cases} 1,\ if\ V_e > V_c, Bdi(n)=0, k=0 \\ 1,\ if\ MX>0, Bdi(n)=0, k=1 \\ 0,\ otherwise \end{cases}$

f. $F(n,j,k)=\left(S_{Nj}-X\right)^{+}, \quad j=0,\ldots N$

g. $$\begin{aligned} CV = e^{-rh}\cdot\Big[&\left(F(n+1,j+1,0)\cdot P+F(n+1,j,0)\cdot(1-P)\right)\bullet P_{stay}+\\ &\left(F(n+1,j+1,1)\cdot P+F(n+1,j,1)\cdot(1-P)\right)\bullet(1-P_{stay})\Big]\end{aligned}$$

8. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

$$F(n,j,k)=\begin{cases} eev(n,j,k)\bullet MX+(1-eev(n,j,k))\bullet CV,\ k=0\ and\ Bdi(n)=0\\ CV,\ k=0\ and\ Bdi(n)=1\\ MX,\ k=1\ and\ Bdi(n)=0\\ 0,\ otherwise\end{cases}$$

9. A method according to claim 1 wherein said computing module determines the cost of the ESO to an employee using:

a. $U((W_0+CE)e^{r\cdot h\cdot N})=V(0,0,0)$

10. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $P(0,0,0)=1$

b. $P(n,j,1)=P(n-1,j,0)\cdot\left(1-P_{stay}\right)$

c. $P(n,0,0)=P(n-1,0,0)\cdot P_{stay}\cdot(1-q)$

d. $P(n,n,0)=P(n-1,n-1,0)\cdot P_{stay}\cdot q\cdot delta_u$

e. $P(n,j,0) = P(n-1,j-1,0) \cdot P_{stay} \cdot q \cdot delta_u + P(n-1,j,0) \cdot P_{stay} \cdot (1-q) \cdot delta_d$

11. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $P_{nv} = \sum_{n=0}^{t_v^*} \sum_{j=0}^{n} P(n,j,1)$

12. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $\sum_{t_v^*+1}^{N} \sum_{j=0}^{j^*(n)} P(n,j,1)$

13. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $\sum_{j=0}^{j^*(n)} P(N,j,0)$

14. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $\dfrac{\sum_{n=t_v^*+1}^{N} (n \cdot h) \cdot P_t(n)}{\sum_{n'=t_v^*+1}^{N} P_t(n')}$

15. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $P_c(n) = \sum_{j=0}^{n}\left[P(n,j,0) \bullet eev(n,j,0) + P(n,j,1) \bullet \delta_{MX>0}\right]$

16. A method according to claim 1 wherein said computing module determines the cost of the ESO using:

a. $\sum_{i=1}^{3} W_i \cdot (\overline{X}_i - \hat{X}_i)^2$

17. A method according to claim 1 wherein said computing module determines the cost of the ESO by determining one of more of a stochastic departure rate, constant dividend amount, time varying parameter, or graded vesting.

18. A method according to claim 1 wherein said computing module determines the cost of the ESO by using a strike price that varies according to an index.

19. A method according to claim 1 wherein said computing module determines the cost of the ESO by using a resettable strike price.

20. A method according to claim 1 wherein said computing module determines the cost of the ESO where an employee pays a fraction of the strike price at a grant date and the remainder of the strike price when the option is exercised.

21. A method according to claim 1 wherein said computing module determines the cost of the ESO where an option does not vest until a stock price equals or exceeds a given value.

22. A method according to claim 1 wherein said computing module determines the cost of the ESO using a trinomial model.

23. An apparatus of claim 4 wherein said processor is further configured to determine the following set of values:

a. $$u = \frac{\gamma + \sqrt{\gamma^2 - 4a^2}}{2a}$$

b. $$q = \frac{a-d}{u-d}$$

c. $$V(N,j,k) = U(W_{Nj})$$

d. $$V(n,j,k) = \begin{cases} V_e,\ k=0, Bdi(n)=0, V_e > V_c \\ V_e,\ k=1, Bdi(n)=0, MX > 0 \\ V_c,\ k=0, Bdi(n)=1 \\ V_c,\ k=0, Bdi(n)=0, V_e \le V_c \\ V_f,\ k=1, Bdi(n)=1 \\ V_f,\ k=1, Bdi(n)=0, MX \le 0 \end{cases}$$

e. $$eev(n,j,k) = \begin{cases} 1,\ if\ V_e > V_c, Bdi(n)=0, k=0 \\ 1,\ if\ MX > 0, Bdi(n)=0, k=1 \\ 0,\ otherwise \end{cases}$$

f. $$F(n,j,k) = (S_{Nj} - X)^+,\quad j=0,\ldots N$$

g. $$\begin{aligned} CV = e^{-rh} \cdot \Big[& \big(F(n+1,j+1,0)\cdot P + F(n+1,j,0)\cdot(1-P)\big)\cdot P_{stay} + \\ & \big(F(n+1,j+1,1)\cdot P + F(n+1,j,1)\cdot(1-P)\big)\cdot(1-P_{stay})\Big] \end{aligned}$$

24. An apparatus of claim 4 wherein said processor is further configured to determine

$$F(n,j,k)=\begin{cases} eev(n,j,k)\bullet MX+(1-eev(n,j,k))\bullet CV,\ k=0\ and\ Bdi(n)=0 \\ CV,\ k=0\ and\ Bdi(n)=1 \\ MX,\ k=1\ and\ Bdi(n)=0 \\ 0,\ otherwise \end{cases}$$

25. An apparatus of claim 4 wherein said processor is further configured to determine

a. $U((W_0+CE)e^{r\bullet h\bullet N})=V(0,0,0)$

26. An apparatus of claim 4 wherein said processor is further configured to determine

a. $P(0,0,0)=1$

b. $P(n,j,1)=P(n-1,j,0)\cdot(1-P_{stay})$

c. $P(n,0,0)=P(n-1,0,0)\cdot P_{stay}\cdot(1-q)$

d. $P(n,n,0)=P(n-1,n-1,0)\cdot P_{stay}\cdot q\cdot delta_u$

e. $P(n,j,0)=P(n-1,j-1,0)\cdot P_{stay}\cdot q\cdot delta_u+P(n-1,j,0)\cdot P_{stay}\cdot(1-q)\cdot delta_d$

27. An apparatus of claim 4 wherein said processor is further configured to determine

a. $P_{nv}=\sum_{n=0}^{t_v^*}\sum_{j=0}^{n}P(n,j,1)$

28. An apparatus of claim 4 wherein said processor is further configured to determine

a. $\sum_{t_v^*+1}^{N} \sum_{j=0}^{j^*(n)} P(n,j,1)$

29. An apparatus of claim 4 wherein said processor is further configured to determine

a. $\sum_{j=0}^{j^*(n)} P(N,j,0)$

30. An apparatus of claim 4 wherein said processor is further configured to determine

a. $\dfrac{\sum_{n=t_v^*+1}^{N} (n \cdot h) \cdot P_t(n)}{\sum_{n'=t_v^*+1}^{N} P_t(n')}$

31. An apparatus of claim 4 wherein said processor is further configured to determine

a. $P_e(n) = \sum_{j=0}^{n} [P(n,j,0) \bullet eev(n,j,0) + P(n,j,1) \bullet \delta_{MX>0}]$

32. An apparatus of claim 4 wherein said processor is further configured to determine

a. $\sum_{i=1}^{3} W_i \cdot (\overline{X}_i - \hat{X}_i)^2$

33. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO by determining one of more of a stochastic departure rate, constant dividend amount, time varying parameter, or graded vesting.

34. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO by using a strike price that varies according to an index.

35. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO by using a resettable strike price.

36. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO where an employee pays a fraction of the strike price at a grant date and the remainder of the strike price when the option is exercised.

37. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO where an option does not vest until a stock price equals or exceeds a given value.

38. An apparatus of claim 4 wherein said processor is further configured to determine the cost of the ESO using a trinomial model.